

Crash Analysis and Coordination with LPAs

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Examples of Coordination with LPAs Using Crash Analysis

- Bicycle and Pedestrian Plan (Case Study)
- Intersection/Corridor Studies
- State Street Re-Design
- Educational Programs
- Future Field Work

Bicycle and Pedestrian Crash Data (2007-2012)

- 310 reported bicycle-vehicle crashes in Tippecanoe County
- 0 bicyclist fatalities
- 333 reported pedestrian-vehicle crashes in Tippecanoe County
- 13 pedestrian fatalities

Pedestrian and Bicycle Infrastructure

- Need for trails? Sidewalks? Bike Lanes?
- Design of Signal Heads and Crosswalks
- Connectivity

Bicycle Crashes by Age (State vs. County)

Table 18: Comparison to the State of Indiana

Age	State of Indiana (2010 Crashes)		Tippecanoe County (2010 Crashes)		Tippecanoe County (Six Year Total)	
< 8	33	3.2%	0	0.0%	6	1.9%
8-15	284	27.2%	6	12.8%	45	14.5%
16-20	171	16.4%	12	25.5%	85	27.4%
21-24	105	10.0%	10	21.3%	61	19.7%
25-34	122	11.7%	7	14.9%	45	14.5%
35-44	94	9.0%	2	4.3%	19	6.1%
45-54	139	13.3%	6	12.8%	21	6.8%
55-64	69	6.6%	0	0.0%	6	1.9%
65-74	19	1.8%	0	0.0%	3	1.0%
75+	5	0.5%	0	0.0%	1	0.3%
Unknown	4	0.4%	4	8.5%	18	5.8%
Total	1,045		47		310	

Bicycle Indiana, Bicycle Collisions in Indiana, May 2012, Issue 12-C14

Bicycle Crashes (Purdue Campus)

Figure 15: Bicycle Crashes Located in West Lafayette Outside the Purdue Area

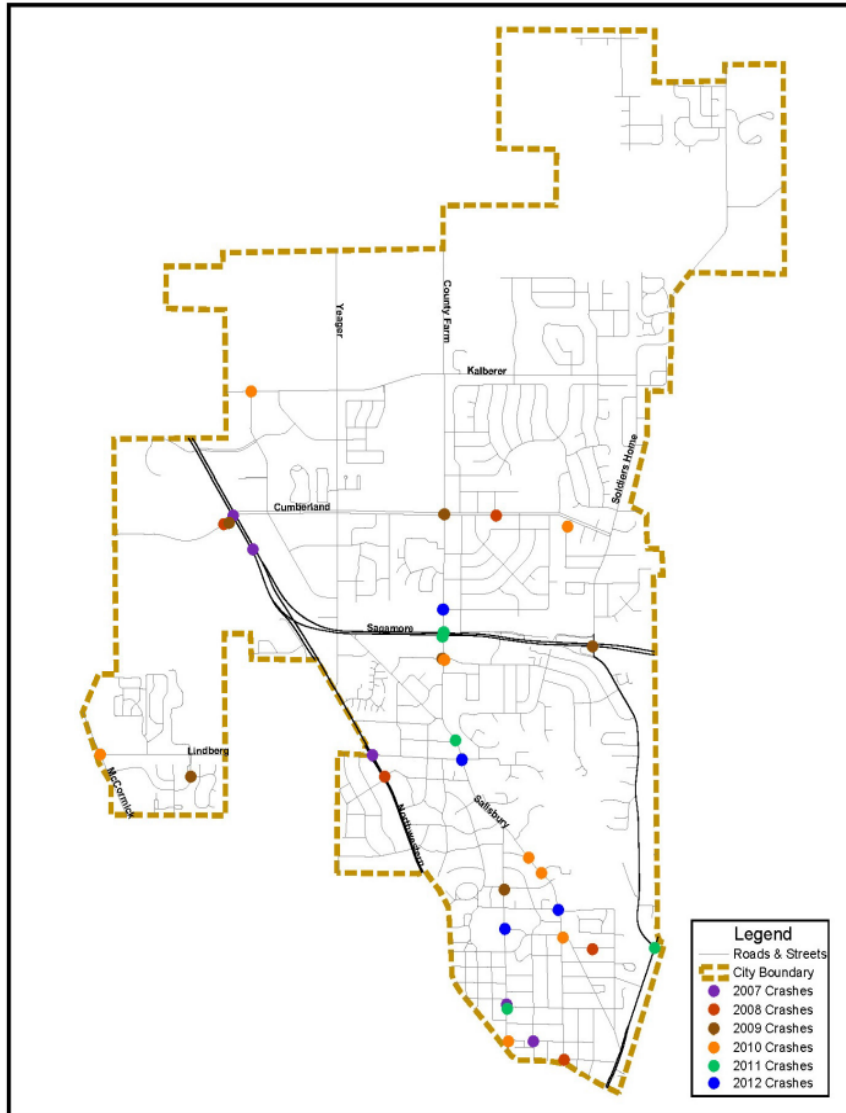
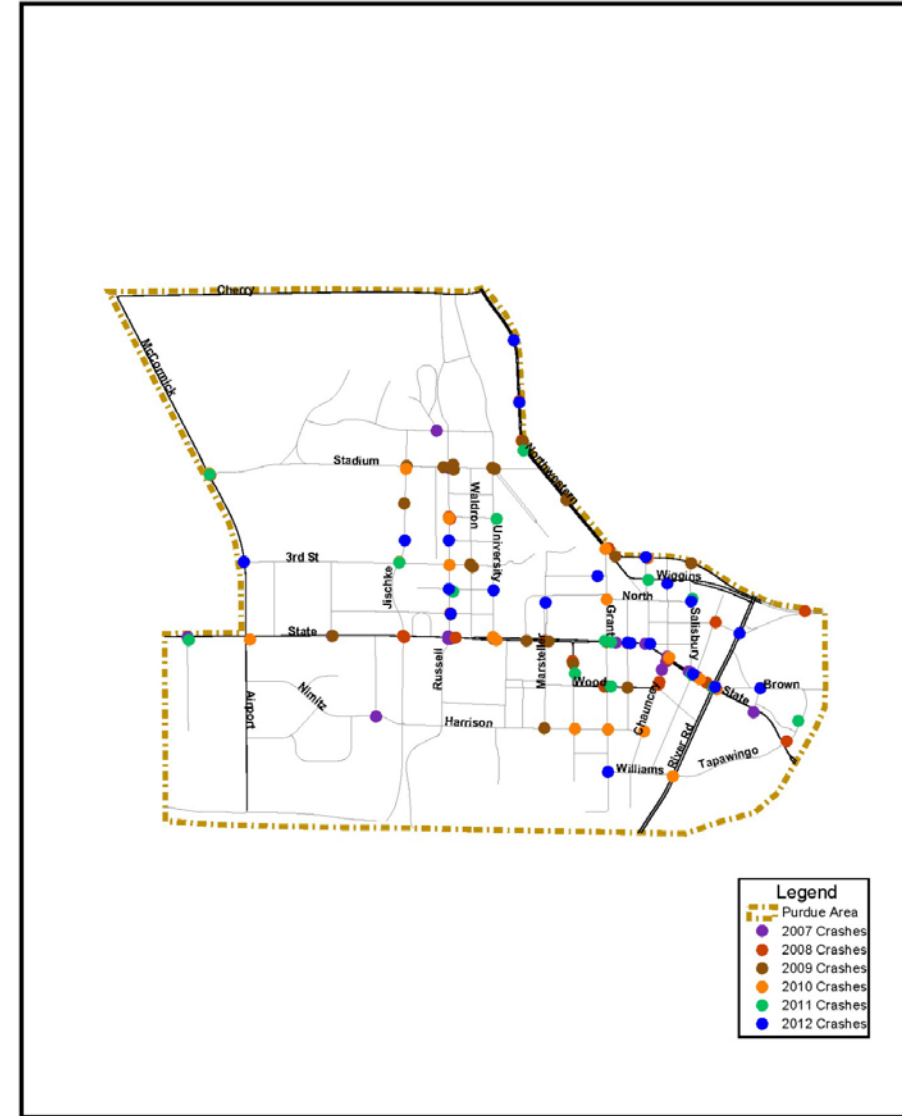
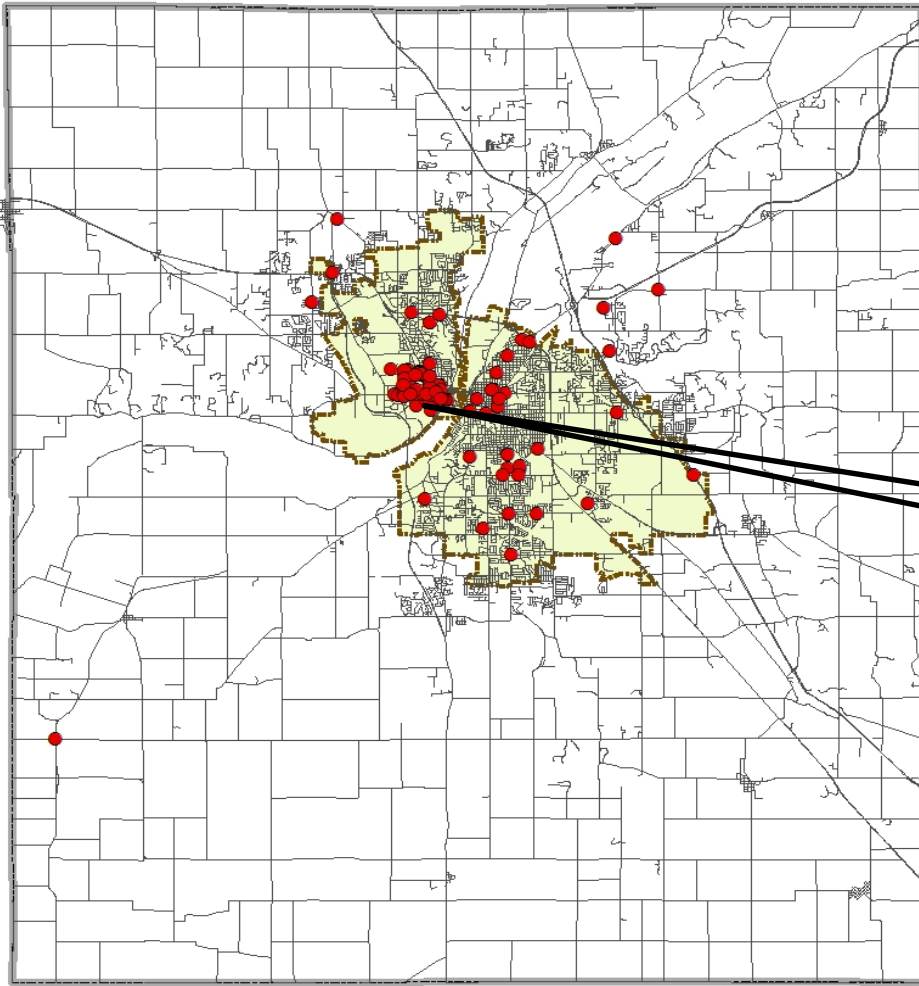


Figure 16: Bicycle Crashes Located in the Purdue Area



Pedestrian Crashes (16-24 Years of Age)



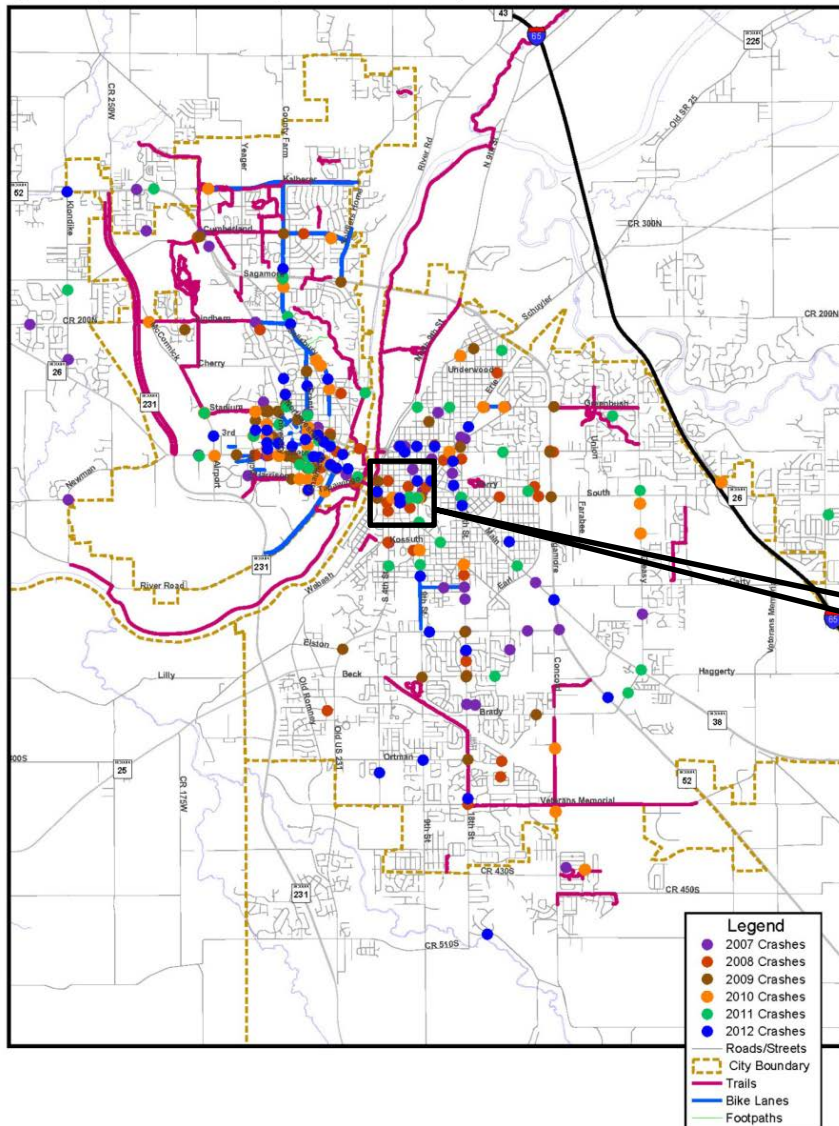
High Concentration of Crashes

Legend

- 16-24
- ▭ City Boundaries
- ▭ County Boundary

Bicycle Crashes and Trails

Figure 19: Bicycle Crash Locations Compared to Location of Trails, Bike Lanes and Footpaths



- Bicycle and Pedestrian Plan Review

Downtown Study Area

Pedestrian Crash Corridor Analysis

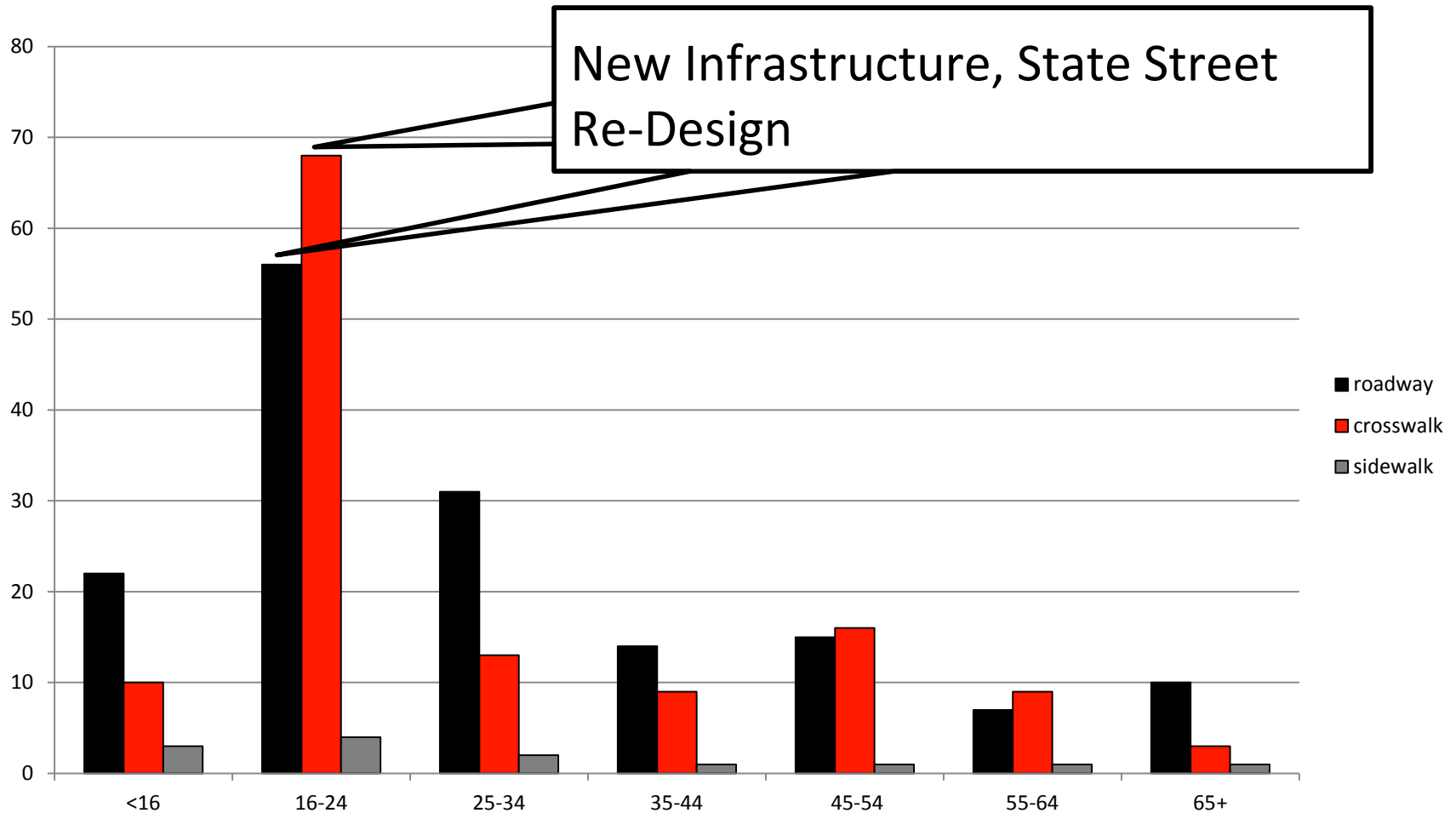
Table 2: Highest Pedestrian Crash Corridors

Rank	Road Name	Pedestrian Crashes
1	State Street	43
2	Northwestern Avenue	19
3	9th Street	13
4	18th Street	8
5	Stadium Avenue	7

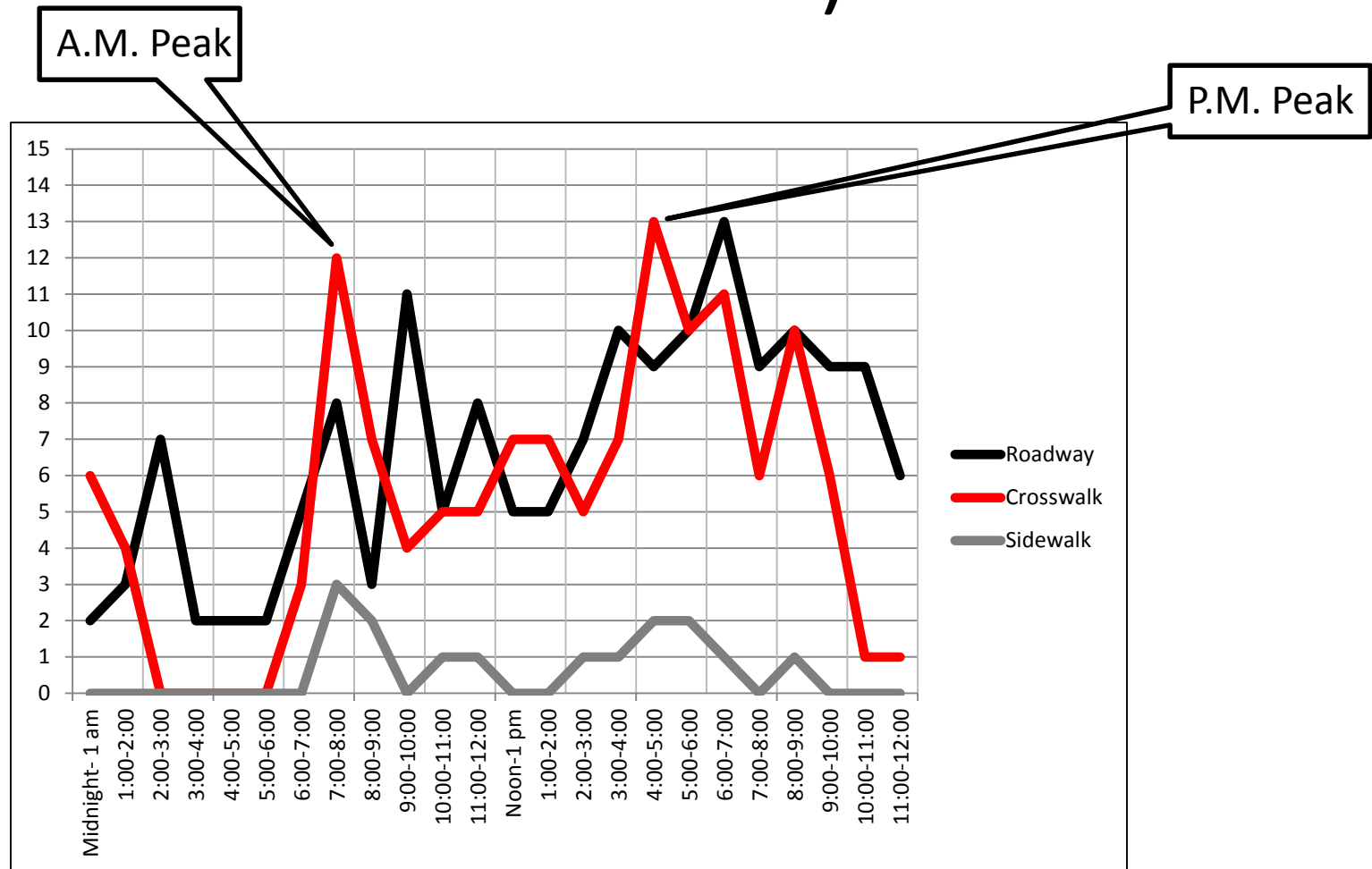
State Street Re-Design

- Speed Limit Analysis

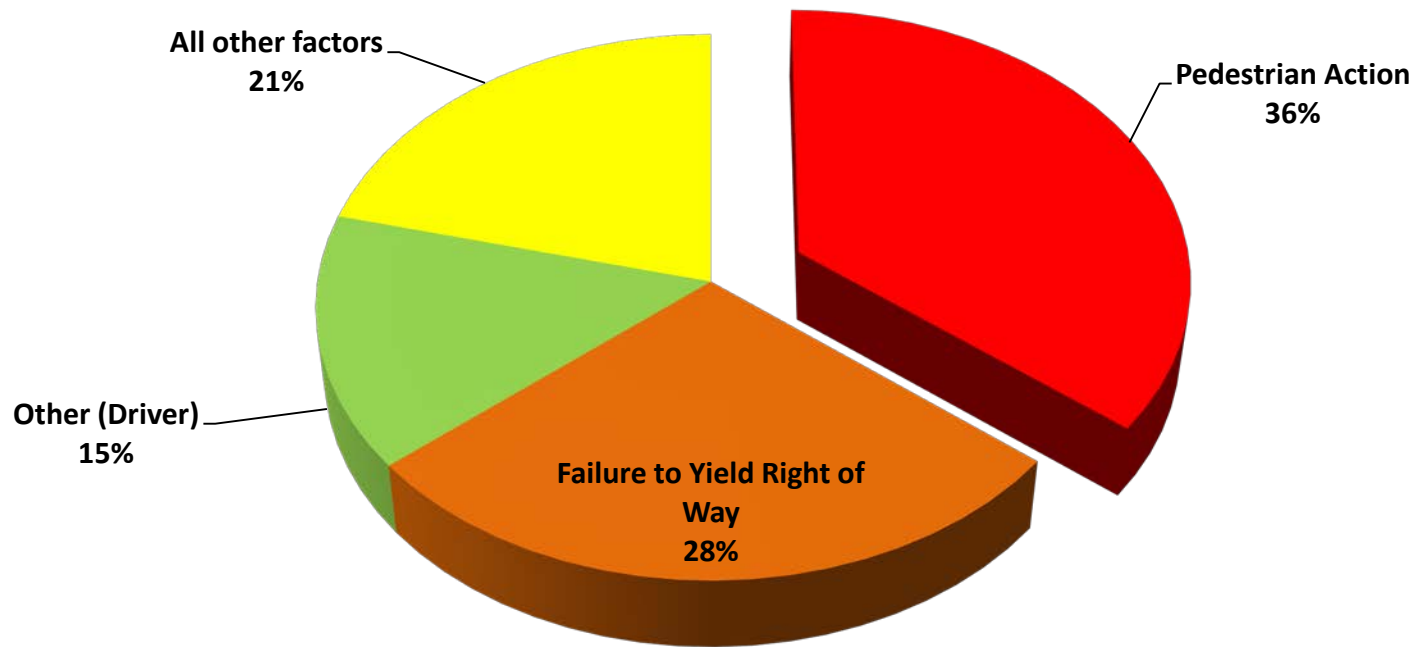
Pedestrian Crashes (Age and Location)



Pedestrian Crashes (Time and Location)



Primary Factors in Pedestrian Crashes



Modified PBCAT Method

Education
Needed?

Table 29: The Causes of Crashes Where the Cyclist Was at Fault

Cause	Number of Crashes	Percent	In Roadway	At Intersection	At Driveway	Alley	Other
Failure to Yield, Entering Intersection	60	39.4%	---	56	2	1	1
Failure to Yield, Entering Roadway	26	16.8%	16	---	5	5	---
Traveling Against Traffic	14	9.0%	---	10	4	---	---
Drove Into Vehicle	11	7.1%	2	5	4	---	---
Brakes Failed	7	4.5%	1	3	---	3	---
No Reflectors or Lights	5	3.2%	1	3	1	---	---
Traveling too Fast and Lost Control	4	2.6%	1	2	1	---	---
View Obscured and Travel the Against Traffic	3	1.9%	---	2	1	---	---
Improperly Turned in front of Vehicle	3	1.9%	3	---	---	---	---
Improperly Passing	3	1.9%	2	---	1	---	---
Changing Lanes	3	1.9%	2	---	1	---	---
Rear-ended Auto	3	1.9%	2	1	---	---	---
View Obstructed	3	1.3%	---	---	---	3	---
No Lights and Traveling in Wrong Direction	2	1.3%	---	1	1	---	---
Sideswiped Auto	2	1.3%	---	1	---	1	---
Wet Pavement	2	1.3%	---	2	---	---	---
Swerved to Miss Another Bike and Hit Car	1	0.6%	---	1	---	---	---
Disregarded Signal/Sign	1	0.6%	---	1	---	---	---
Slipped off Curb	1	0.6%	1	---	---	---	---
Intoxicated	1	0.6%	1	---	---	---	---
Total	155		32	88	21	13	1

Bicyclists Against Traffic

Table 26: Crashes on Sidewalks and Against Traffic

Year	Total Number	On Sidewalk	Percent	Against Traffic	Percent	Both	Percent
2007	65	22	33.8%	27	41.5%	18	27.7%
2008	56	23	41.1%	16	28.6%	14	25.0%
2009	49	16	32.7%	21	42.9%	14	28.6%
2010	47	7	14.9%	12	25.5%	5	10.6%
2011	43	11	25.6%	17	39.5%	10	23.3%
2012	50	12	24.0%	12	24.0%	7	14.0%
Total	310	91	29.4%	105	33.9%	68	21.9%

Education
Needed?

Summary of Examples from Tippecanoe County

- Bicycle and Pedestrian Plan Review Process
- Speed Limit Studies
- State Street Re-Design (New Infrastructure)
- GLPTC Safety Campaign

Potential Future Field Work

- Signage and Pavement Markings
- Walkability and Bikeability Surveys
- Pedestrian/Bicycle Counts
- Innovation

Innovation



Image (Retrieved: 2/24/15):

<http://www.citylab.com/tech/2014/09/how-about-a-crosswalk-light-that-dances/380414/>

Innovation

Video (Retrieved: 2/24/15):

<https://www.youtube.com/watch?v=DdUkiQ0rxb0>

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